LOOKING FOR AND FINDING "THE NEXT BIG THING" BRINGING VIRTUAL TEAM CONCEPTS TO THE EXECUTIVE MBA AND MBA CLASSROOMS
A Reprise

MICHAEL L. BARRETTI* AND SUSHIL BHATIA**

Abstract

Many corporate strategies place significant emphasis on innovation and new product development as the principal vehicles to drive competitive advantage and increased profitability.

How does an Executive MBA program convey this message clearly to its students in a way that captures the reality of the environment within which innovation-driven companies operate? How can real-world, cross-border innovation and product development be taught in a meaningful experiential fashion within the confines of the classroom? Can a course be designed to equip the students with the necessary knowledge, expertise and capability to make this happen? In 2005 we presented the blueprint for a unique, interactive pedagogy - used in the Suffolk University EMBA Program - to successfully accomplish these objectives, and discussed our findings based on the results from the utilization of these techniques in seven classroom experiences. This paper is intended to present further findings based on their continued utilization over the last five years, covering six additional classroom experiences.

During this time over 15 new products leas have been created in EMBA classes and entered in Suffolk's New Product Innovation Competition (NPIC). Three of these products have won first place honors in this competition whereas some other ones have ended up being among the finalists.

Keywords: *Executive MBA Virtual, Innovation, New Product Innovation Competition (NPIC)*

I. INTRODUCTION

On March 10, 2005 we received the final deliverables for an intensive new course, and arrived at the culmination of the first stage of what we believe to be an innovative pedagogy in the Suffolk University Executive MBA Program, and in executive learning in general.

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* Director, Executive Education and Life-long Learning

** Executive-In-Residence Suffolk University, Sawyer Business School, 8 Ashburton Place, Boston, Massachusetts, USA

The course in Global Innovation and Product Development was taught by Prof. Sushil Bhatia, Executive-In-Residence, and applied the concept of virtual teams to bring the deliverables from the idea stage all the way to physical prototype in a very short ten weeks. By carefully designing and controlling the pedagogy, we were able to replicate real-world, cross-border product development activities. To do this, we had to impose significant restrictions on communications among team members, limiting face-to-face meetings and forcing reliance on other forms of communication technology. The Executive MBA students, in the spirit of learning, willingly took on different cultural mantras and went to great lengths to ensure the integrity of the boundaries established.

Given the dynamics of the marketplace in the last five years, and especially the roiling nature of the last two and the dearth of top line expansion, many companies – both public and private - have responded with enormous efforts to reduce both structural and attendant cost. This often meant restructuring their business models, placing more emphasis on virtual capabilities, particularly those extending to product design, development and production capability. This increased the existing need for designers, engineers and managers who are equipped with the knowledge and skills required to operate in shared virtual design and engineering environments, capable of collaborating with a diverse group of strangers in teams that are geographically distributed in various countries and time zones, speaking different languages, within different organizational cultures, and operating in business environments contending with different kinds of government regulations.

In 2005 we set out to demonstrate that an Executive MBA program can convey this clearly to its students in a way that captures the reality of the environment within which innovation driven companies operate. We set out to replicate reality in a classroom. We searched for ways to deliver the required information, and the pedagogy to be used. Could a course be designed to equip the students with the necessary knowledge, expertise and capability to make this happen? We believed it could and our earlier paper provided an initial demonstration of that capability. (Barretti, Bhatia, 2007).

Five years on, and seven classroom demonstrations later, we have further confirmed our initial findings.

II. WHAT IS A VIRTUAL TEAM?

"Two problems plague the use of the term virtual teams. First, people casually use it to apply to a wide variant of social and organizational phenomena. This is misleading particularly for those who struggle with creating the conditions for effectiveness.

Let us briefly review some key components of our work, beginning with the definition of "virtual team."

In our class creation work we continued to look at several definitions of virtual teams to modify our efforts.

One of them defines virtual team that consists of team members who are geographically dispersed and who come together by way of telecommunications technology (e.g. video conferencing). Virtual Teams consist of team members who are geographically dispersed and who come together by way of telecommunications technology (e.g. video conferencing). Each team member may be located in traditional office setting, but the offices are not proximate to one another. (Kurland & Balley,1999).

A Virtual Team – also known as a Geographically Dispersed Team

(GDT) - is a group of individuals who work across time zones, and organizational boundaries with links strengthened by webs of communication technology, They have complementary skills and are committed to a common purpose, have interdependent performance goals, and share an approach to work for which they hold themselves mutually accountable. Geographically dispersed teams allow organizations to hire and retain the best people regardless of location. Members of virtual teams communicate electronically, so they may never meet face. However, most teams will meet at some point in time. A virtual team does not always mean teleworker. Teleworkers are defined as individuals who work from home. Many virtual teams in today's organizations consist of employees both working at home and small groups in the office but in different geographic locations.

Designing the new product development team for success is quite different from designing the learning network for success. (Gibson, C. 2003).

In order for the team to be considered virtual it must have the following three attributes:

1. It is a functioning team, a collection of individuals which are interdependent in their tasks, share responsibilities for the outcomes, see themselves, and are viewed by others as an intact social unit embedded in one or more social systems and collectively manage their relationships across organizational boundaries.

2. The members of the team are geographically dispersed.

3. The team relies on technology–mediated communications rather that face-to-face interaction to accomplish its tasks.

Learning networks, communities of practice, web based interests groups, and other loosely formed collectives are not real teams. Communicating with others electronically does not transform a collection of people into a team. Team must have real tasks to perform, interdependent members, and shared outcomes.

What makes a virtual team virtual is geographical dispersion and the use of technologically mediated communications.

III. BRINGING IT TO THE CLASSROOM

For our original research in 2005 we chose a class of 25 Executive MBA students with many years of business experience from a broad range of industry sectors,

with the notable exception of manufacturing. The standard course duration of the Suffolk University Executive MBA Program was maintained, meaning the course met for 3 hours and 45 minutes, once per week on Saturdays only, for 10 weeks.

Our follow-up work since then was conducted with three classes of traditional MBA students also, numbering over 110 in the aggregate.

IV. COURSE OBJECTIVE(S), LEARNING OUTCOMES AND ASSESSMENT

The principal objective of the class was to raise the student's awareness of the principles of global product development and product launches within virtual enterprises and virtual teams. Within the context of this objective, students needed to learn the techniques of virtual teamwork, including the selection and use of different methods of communication, as they apply to innovation and new product development in a global environment. These objectives remained the same since inception.

The proposed learning outcomes of the course were:

1. To enable the students to understand how to conduct product development within a culturally diverse, global virtual team environment;

2. To help students define and conceptualize new products by applying state of the art knowledge sharing and collaborative work methods;

3. To help students extend and apply knowledge related to new product development technologies, product structuring, and adaptability to global conditions. (Yubas, M. 2004);

4. To help students understand how multinational companies have adopted virtual team concepts to develop and launch new global products particularly green and sustainable products. (Esty and Winston, 2006)

The proposed learning outcomes remained the same since inception.

Assessment of individual and team learning outcomes was conducted as follows:

1. Individual case analysis;

2. Delivery of project prototype;

3. Team centric presentation of the project and product developed.

The assessment tools remained the same since inception.

V. METHOD AND APPLICATION

At the beginning of the original EMBA course and in subsequent MBA courses, students were divided into virtual teams and "adopted" different nationalities/ locations/countries/organizations and roles so as to experience the global innovation and product development process as if they were actually located and operating in different cultures. Therefore, this meant that each student was required to gain a full appreciation and high level of understanding of the overall culture, and

specifically the general business practices and methodologies of their adopted country.

In order for the course objectives and learning outcomes to be realized, the integrity of the virtual team process was crucial. To support this, the following controls, the same as before were employed in the original EMBA group, were replicated:

1. During the duration of the course, each student was required to work within the cultural context and perspective of their adopted country. This meant that cultural and business norms, such as vacation, holidays and work rules, had to be honored. (Kirkman, 1995).

2. Each team was allowed three face-to-face meetings of two hours duration, at specifically defined intervals during the course; i.e. in the 1st, 4th and 8th session, and to make the final product presentation. This then required team members to use alternative methods of communication at all other times, including collaborative design tools and knowledge management systems, among others. In effect, they were charged with developing a new product relying solely on technology-mediated communications to stay in touch and get their work done, which included the following tools: Collaborative software, telephone, basic conference, standard password conference, premium password conference, web conferencing, picture talk, video conferencing, knowledge channel, Sometime, Discovery, Blackberry, PDA, Outlook Calendar, facsimile, snail mail, courier services.(McDonough, Kahn, and Griffin, 1999).

3. Since many of the team members were "located" in different time zones (given the country "adopted") this required that participants be aware of and honor time zone differences.

4. The leader of each team was required to maintain a team interaction log book, periodically reviewed/verified by the course instructor, which was turned in at the end of the semester. This log detailing contact information, including subject matter discussed, communication methodology, and other pertinent items In the course of the instructor's review of the logbook, students were provided direct feedback on approach, methodology, team related matters and, of course, the viability of their product at that point in its development. (Malhotra, Majchrzak, and Rosen, 2007).

5. Since the principal communication platform for the course was Blackboard, students were encouraged to use the capabilities of this platform as their principal communications means, with the understanding that it permitted the instructor to observe many of the communications between team members, and served as another check on the integrity of the virtual team process.

6. Since normal class meetings - including lectures, classroom experiential activities, case analysis, and project progress reports - were conducted as

part of the learning process, students were still expected to honor the limits placed on interaction and communication within the classroom, on breaks and, indeed, within the campus and extra-campus environment. As the product development got under way, only one team member was allowed to present the progress, the remainder being silent as if virtually present. At the beginning of the course, students agreed that an implied contract existed between them and the instructor regarding this matter. (Paulson and Naquin, 2004).

7. Students were encouraged to take on functional roles within their teams different than those within their professional experience. This helped them develop short-term skills in a completely different functional area.

VI. COURSE DELIVERABLES

At the end of the course each team was to physically deliver a fully documented, new product prototype, and to make a 30 minute presentation to the instructor and invited guests as if they we making it to a board or product development committee. In addition, each team was required to prepare and present:

1. A working prototype of the product being developed;

2. A product brochure;

3. The detail of market research conducted for the product;

4. The detail of the product feasibility assessment;

5. Identification of the source and location of materials or other resources required to get to the end point;

6. An assessment of IP protection available; this meant a rudimentary patent and trademark search.(Pressman David, 2005)

No business plan was required, but an executive summary needed to be constructed that included appropriate financial data and demonstrated an appreciation of the involvement of other functional areas within the organization.

VII. BY-PRODUCT LEARNING OUTCOMES FOR STUDENT PARTICIPANTS AND FACULTY

1. Trust, an issue realized in the initial research, continues as a principal issue among team members and the leader. (Paulson and Naquin, 2004).

2. The quality of the communication, not the frequency, is what counted and manifested itself in our earlier research that counted, and it continued to be the case in the ensuing discovery.

3. As earlier uncovered, team members learned that effective leaders provide a strong human link, ensure smooth and frequent communication, minimize politics, identify conflict early and work to resolve it. Importantly, the leader must champion the value of the virtual team.

4. As earlier revealed, team members learned that they must "collaborate and innovate."

5. Corroborating earlier findings, team members learned the importance and difficulties of accessing and transferring different types of knowledge; e.g., explicit and tacit. (Kirkman, Rose, Tesluk and Gibson, 2004).

6. Team members learned that virtual teams must learn, understand and respect differences in cultures and languages, time gap and its effect, lack of visibility and body language, risk of failure and how interdependence can help reduce it; finding similar to our earlier work.

VIII. STUDENT FEEDBACK

As in our earlier effort, we received feedback indicating that students learned that there were many points of frustration, which duplicated the real life situation of the "virtual project team," such as disrupted communications, technology failure, team member "forgetfulness," challenges to the support system, dysfunctional conflict, insufficient knowledge and work sharing, issues attendant to developing trust.

IX. COINING A NEW TERM: KSA TO KSA[2.]

Our earlier work resulted in the establishment of a new term: KSA to KSA[2]. In our later work, we required each team member to justify their inclusion in the "virtual team," and the team leader to justify team member selection as well as why they were accepted. As before, the justification always rested, as usual, around knowledge, skills and abilities plus the attitude of the team members.

X.   CONCLUSION

Consequential to the all-around success of our follow-on work, we draw the following conclusions, confirming our earlier work:

1. It is possible to develop sufficient trust in a short period of time among students who come from different backgrounds, have different life and work experiences, and have different personal goals. A common objective and the awareness that success is directly related to the trust developed by the mutual dependence of the virtual team members was a foundational experience for the course participants.

2. The students will appreciate the experience in which they learn and execute multiple activities simultaneously vis-à-vis new product development.

3. The enthusiastic participation of students, their understanding and desire to successfully develop a new product "on a global basis," confirmed the importance of attitude with knowledge, skills and abilities, resulting in our creation of KSA [2].

4. A positive attitude, a sense of urgency, and the ability to set appropriate priorities contributed to the success of the virtual teams.

5. The pedagogy implemented in this course brought people to a place where they could give shape to their creativity and innovative instinct. (Kirkman, Rose, Tesluk and Gibson, 2004).

6. Students will respect and honor a classroom imposed "code of ethics" and work within the restrictions imposed to create and shape the virtual team environment.

7. The feeling of excitement the students had when they could hold, touch and feel the product as it came into being cannot be duplicated by any other classroom product development course experience. (Yubas, 2004).

8. It is, indeed, possible to duplicate the real company virtual team experience in a classroom setting.

9. During this time EMBA students have created 15 new product ideas while MBA students created over 25 new product ideas.

10. Creation of these products in the EMBA class resulted in the founding of New Product Innovation Competition (NPIC) at Suffolk University in 2006. These product ideas were all entered in this competition using the form shown in Attachment 1.

11. Entries in this competition were scored on by judges from the business community.

12. After the success in 2006 this NPIC was opened to the rest of the university and is now its fifth year.

13. EMBA entries have competed against a growing number of entries over the 4 years of NPIC as shown in table 1 and graphed in Chart 1.

14. The product ideas created by EMBA won the first prize honors in this competition for three years in a row and were among the finalists in the fourth year. The entries were judged using the criteria shown in Attachment 2.

15. Attachment 3 showing the winners of the competition is evidence to the fact that it is possible to develop new products using virtual teams.

Table 1
Suffolk New Product Innovation Competition (NPIC)

Year	No. of entries
1	27
2	125
3	240
4	250+

Chart 1: Number of Entries vs. Years
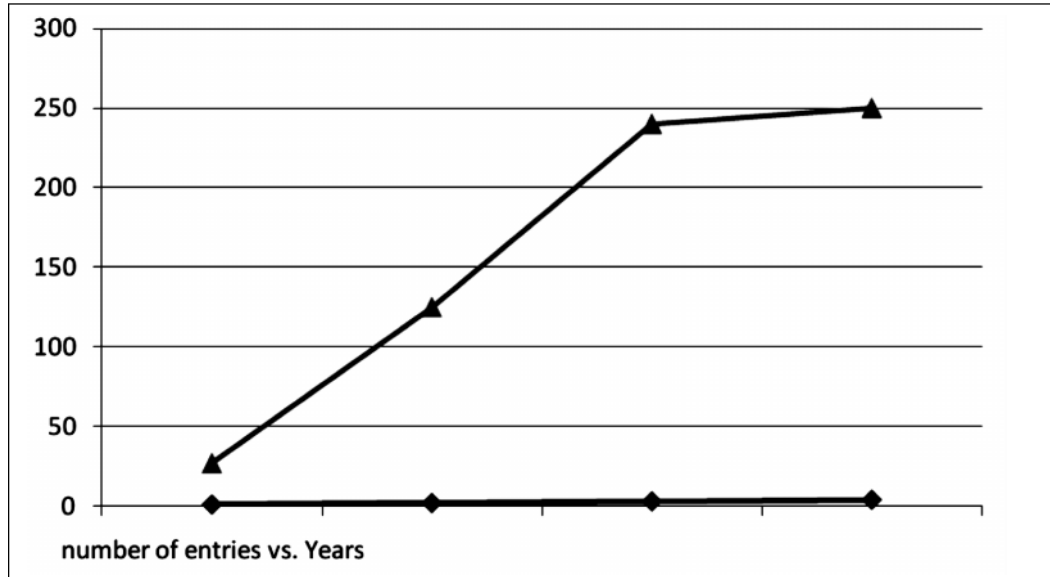
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Attachment 1

Suffolk University
Sawyer Business School

New Product Innovation Competition
Submission Form

For questions, please contact: Sushil Bhatia: *sbhatia@suffolk.edu*

NOTE: Submit completed forms at: *www.suffolk.edu/newproduct* and e-mail a copy to *sbhatia@suffolk.edu*

Date of Submission: _____

Product Name: _____

(Attachments: Please attach drawings, sketches, photographs and any other relevant information of your product)

Innovator's Contact Information: (PLEASE PRINT or TYPE)

Your Name_____

Address_____

City, State, Zip Code_____

Phone_____

Email_____

Submitter's Signature_____

How did you hear about the competition ? _____

Please check all that apply:

I am a Student _____ Student ID _____ Alumni _____

Year of Graduation _____   Major/Degree Program: _____

Current Status: __Freshman __Sophomore __Junior __Senior ____Grad_____MGMT 101

School: __Sawyer Business School (SBS) __ College of Arts and Sciences (CAS) __Law School

Gender: __Male __ Female

Innovative New Product Concept

Product Name:

Product Description: Briefly describe (25 words or less) what the product is:

Product Origin:
How did you come up with this idea? Briefly describe.

Patents:
Would you like to know more about patent and other methods of protecting your new product idea? Yes No

Value Proposition:
Product Sale Price:

Describe your product's primary function as clearly as possible.
What does it do? How does it do it?

Describe the principal applications of this product

List all other applications of this product.

Competitive Advantage

List your product's competitors by manufacturer, brand name and model number; describe how your product improves upon competitive products or technologies and describe the uniqueness of your product over the competition's product.

Describe "**gree**n **and sustainable**" features and benefits of your product.

Feasibility

Briefly describe "what will it take to launch the product".

Cover the risks and rewards of implementation and execution. (Production, marketing, sales etc.)

Summary

State in layman's terms why you feel your product will be a success in the market...

Why is it important to have this product?

What benefits will it provide?

Attachments: Please attach drawings, sketches, photographs and any other relevant information about your new product idea.

Attachment 2

Suffolk University
Sawyer Business School, Boston, MA
New Product Innovation Competition
Judging Scorecard

Judging Directions: Imagine you are a consultant and your job is to evaluate new concept plans proposed by innovators individually or as teams. Please circle points:**1 (Low) & 5 (High)** that best describe how you feel about the submission.

Date:_____

Name of Innovator:_____Name of Judge:_____

1. CONCEPT (Product Name):_____

A. How bold and fresh is concept (Please circle)

Ordinary						Unique
Seems old and familiar, not too Creative, and may repackage an old concept as "new and improved."	1	2	3	4	5	A new concept, evoking a "wow" response. May be a unique combination of old ideas.

B. How persuasive and coherent is the concept? (Please circle)

Crude						**Well Crafted**
Not persuasive. Seems sloppy or Incomplete and is not presented in an understandable manner.	1	2	3	4	5	Clear, compelling and refined to its highest possible level.

2. VALUE PROPOSITION

How does the concept meet/create customer need? (Please circle)

Low Value						**High Value**
Disconnected from customer reality and doesn't add much value	1	2	3	4	5	Meets spoken or unspoken customer need, anchored in customer experience.

3. BOTTOM LINE RESULTS

How compelling are the concept's quantitative and qualitative benefits? (Please Circle)

Low Benefits						**High Benefits**
Insubstantial or inadequate demonstration of quantitative and qualitative results.	1	2	3	4	5	Significant and credible demonstration of quantitative and qualitative results.

4. COMPETITIVE ADVANTAGE (Please circle)

How does the concept provide a unique competitive advantage?

No Advantage						**Tremendous Advantage**
Does not provide significant Competitive advantage for the Company	1	2	3	4	5	Competitive advantage is unique and difficult to mimic.

5. FEASIBILITY

How easily can concept be implemented and are risks addressed? (Please circle)

Low Feasibility						**High Feasibility**
Does not seem feasible. Poor risk assessment.	1	2	3	4	5	Seems feasible and risks are properly addressed.

6. Does this product have the environmental "green" features i.e. is it environmentally friendly and safe?

Low   1   2   3   4   5   High

7.   Special Bonus Points: (Between 1-5 points) _____

Total Points = _____

8.   Your comments/suggestions to the innovator:

Name of the Innovator: _____ Name of Product:_____

Judge Information: Date completed _____

Name of Judge: _____Company: _____

Address: _____

City:_____ State _____ Zip Code _____

Tel: _____ e-mail: _____

Signature: _____

Attachment 3
(From Suffolk University Alumni Magazine, p. 4, Fall 2008 issue)

■ NEWS

Innovation Inspires New Product Development

At first glance, the Nano DeCopier appears out of place in the Business School's Business Law and Ethics department -- just a strange white bucket sitting on the shelf across from the copy machine and the mailboxes. But feed it a few pages of used office paper, newspaper, or junk mail, and its value is immediately apparent.

2007 1st Place Winners: left to right - John Hawkes, EMBA '08, Scott Ariel, EMBA '08, Dawn Brucale, EMBA '08, and Mike Peganato, EMBA '08. Missing from photo: Matt Plante, EMBA '08. **Product: Neuspoon**

Working with a near-silent slosh, the machine removes all ink from the pages and then reduces it to a reusable paper pulp, making paper disposal not only more secure and quieter than shredders, but more environmentally friendly, too.
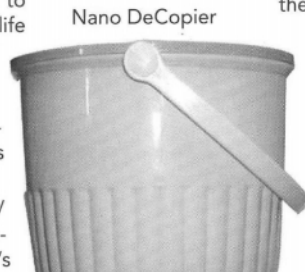
The dry pulp that remains is packed in little black bags, dutifully picked up by Dr. Sushil Bhatia, EMBA '79, Executive in Residence at the Business School, to start its reincarnated life as papier-mâché, packaging peanuts, or fire place logs. "The cycle," says Bhatia of the process, "now becomes complete."

The Nano DeCopier/ Paper Pulper is the brainchild of three of Bhatia's

Nano DeCopier

DeCopier and it comes out clean on the other side," says Bhatia.

Last November, the students' Nano DeCopier invention won the $1,000 Urvashi Bhatia Green Product prize—named after Bhatia's wife— one of the big prizes at the second annual New Product Innovation Competition.

Dr. Bhatia started the competition in 2006, after a year teaching the executive MBA's new product development course. That first year, the competition was limited to graduate level students, but he expanded it in 2007 to

Keynote speakers at the competition in the past have included Art Fry, inventor of the Post-It Note, and George Davison, founder and CEO of Davison International-a large product design and development company that has produced everything from the Swiss Army Whistle Knife to "The Perfect Pizza Pan."

As the competition grows, says Bhatia, it brings more and more businesses in touch with Suffolk students. One of the ways he achieves this is by inviting executives from outside companies like Highland Capital, and Bose Corporation to judge the competition. "The idea is to have the judges who are non-faculty members so we can bring more and more business people into the Suffolk fold, many of the judges are inventors themselves, new business